

RELY ON EXCELLENCE

M3N

Mechanical seals | Mechanical seals for pumps | Pusher seals



Features

- For plain shafts
- Single seal
- Unbalanced
- Rotating conical spring
- Dependent on direction of rotation

Advantages

- Universal application opportunities
- Insensitive to low solids content
- No damage of the shaft by set screws
- Large choice of materials
- Short installation lengths possible (G16)
- Variants with shrink-fitted seal face available

Operating range

Shaft diameter:
 $d_1 = 6 \dots 80 \text{ mm}$ (0,24" ... 3,15")
Pressure: $p_1 = 10 \text{ bar}$ (145 PSI)
Temperature:
 $t = -20 \text{ °C} \dots +140 \text{ °C}$ (-4 °F ... +355 °F)
Sliding velocity: $v_g = 15 \text{ m/s}$ (50 ft/s)
Axial movement: $\pm 1.0 \text{ mm}$

Materials

Seal face: Special cast CrMo steel (S)
Seat G9: Carbon graphite antimony impregnated (A), Carbon graphite resin impregnated (B)

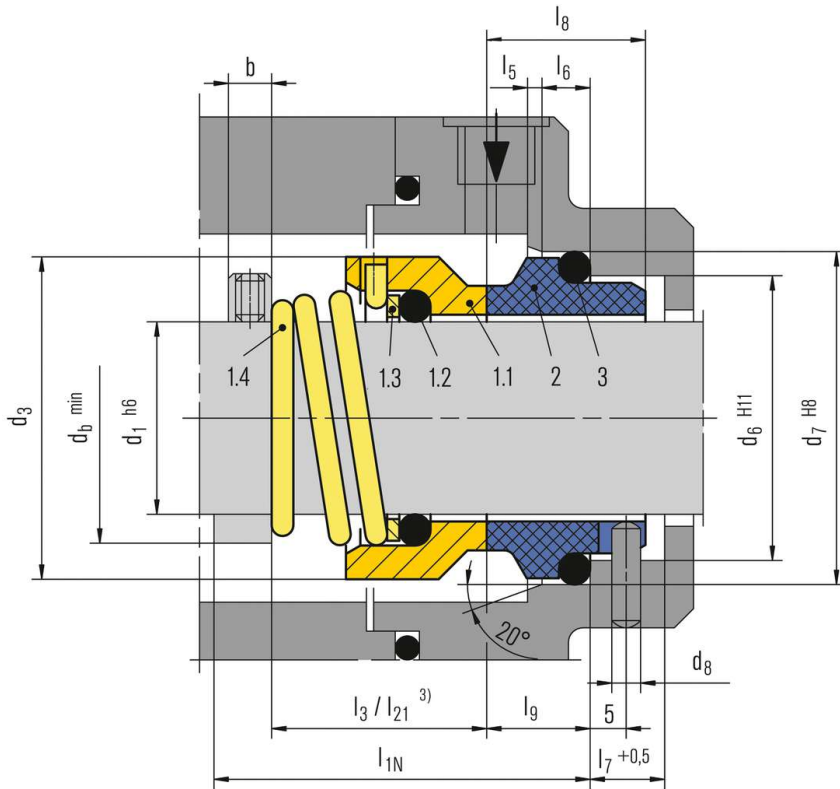
Standards and approvals

- EN 12756

Recommended applications

- Chemical industry
- Pulp and paper industry
- Water and waste water technology
- Building services industry
- Food and beverage industry
- Sugar industry
- Low solids content media
- Water and sewage water pumps
- Submersible pumps
- Chemical standard pumps
- Eccentric screw pumps
- Cooling water pumps
- Basic sterile applications

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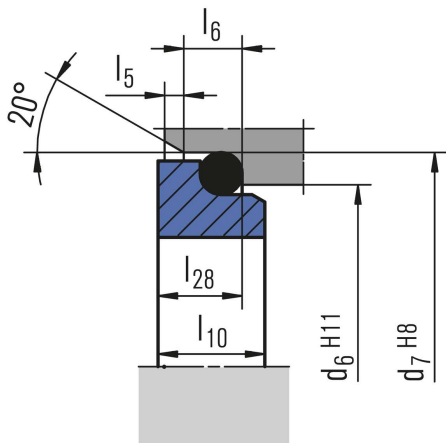


Item Part no. to Description
DIN 24250

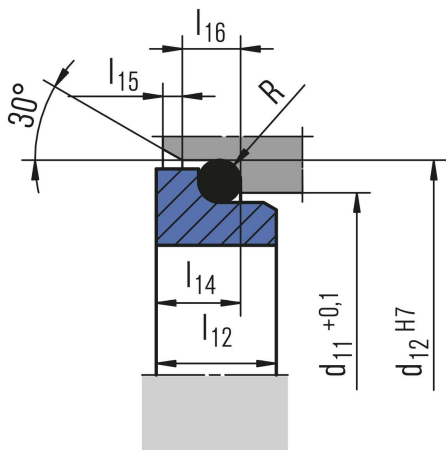
1.1	472	Seal face
1.2	412.1	O-Ring
1.3	474	Thrust ring
1.4	478	Righthand spring
1.4	479	Lefthand spring
2	475	Seat (G9)
3	412.2	O-Ring

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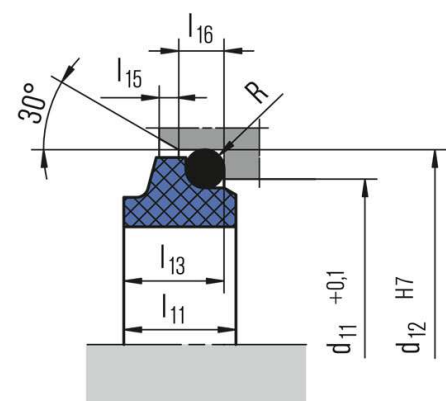
Seat alternatives



G6 (EN 12756)

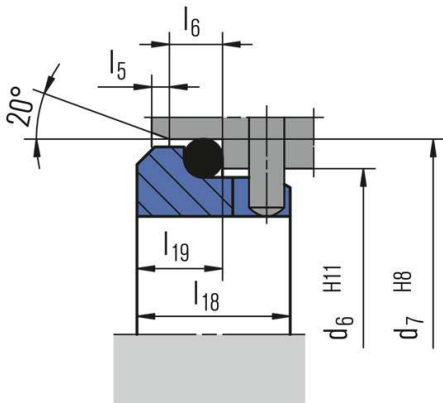


G4

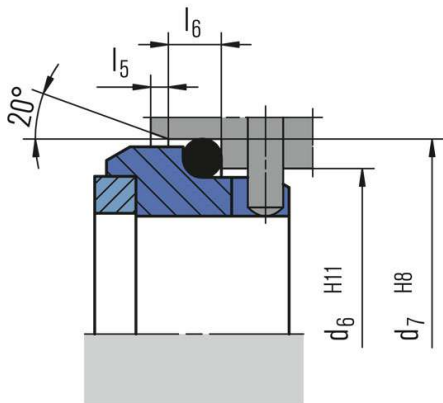


G13

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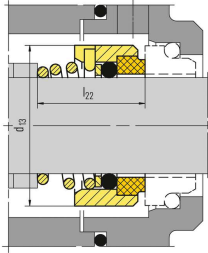
G16 (EN 12756)



G9 (EN 12756)

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Product variants



M32

Items and descriptions as for type M3N, but with carbon graphite seal face shrink-fitted to the seal face carrier (Item no. 1.1).

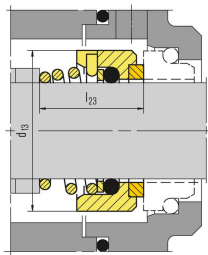
Seal face: Carbon graphite antimony impregnated (A), Carbon graphite resin impregnated (B)

Seat G4: special cast CrMo steel (S), Silicon carbide (Q1, Q2)

Seat G6 (M32N4): Special cast CrMo steel (S), Silicon carbide (Q1, Q2)

Seat G9 (M32N): Silicon carbide (Q1, Q2)

Seat G6 also available in A, B = G30 (longer installation length than G6)



M37G

Items and descriptions as for type M3N, but with shrink fitted silicon carbide seal face to the seal face carrier (Item no. 1.1).

Shaft diameter:

$d1 = 16 \dots 80 \text{ mm} (0.63" \dots 3.15")$

Temperature:

$t = -20 \text{ °C} \dots +180 \text{ °C} (-4 \text{ °F} \dots +355 \text{ °F})$

Sliding velocity: $v_g = 10 \text{ m/s} (33 \text{ ft/s})$

Seal face: Silicon carbide (Q12, Q22), Tungsten carbide (U22)

Seat G4: Silicon carbide (Q1, Q2)

Seat G13: Carbon graphite antimony impregnated (A), Carbon graphite resin impregnated (B)

Seat G6 (M37GN4): Silicon carbide (Q1, Q2)

Seat G9 (M37GN): Carbon graphite antimony impregnated (A), Carbon graphite resin impregnated (B), Silicon carbide (Q1, Q2)

Seat G6 also available in A, B = G30 (longer installation length than G6)

M3

Items and description as M3N.

Seal face: Special cast CrMo steel (S)

Seat G13: Carbon graphite antimony impregnated (A), Carbon graphite resin impregnated (B)

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Dimensions

d ₁	d ₃	d ₆	d ₇	d ₈	d ₁₁ ¹⁾	d ₁₂ ¹⁾	d ₁₃	d _b	l _{1N}	l ₃ ³⁾	l ₅	l ₆	l ₇	l ₈	l ₉	l ₁₀	l ₁₁	l ₁₂	l ₁₃	l ₁₄	l ₁₅	l ₁₆	l ₁₈	l ₁₉	l ₂₁ ³⁾	l ₂₂	l ₂₃	l ₂₈	b ²⁾	R
6	14	-	-	-	11.5	16.0	16	8	-	-	-	-	-	-	-	9.0	6.5	7.1	5.6	1.2	3.8	-	-	10.5	11.9	-	-	-	-	1.2
8	18	-	-	-	15.5	19.2	18	11	-	-	-	-	-	-	-	9.0	8.0	7.1	7.0	1.2	3.8	-	-	15.5	16.9	-	-	-	-	1.2
10*	19	17	21	3	15.5	19.2	20	13	40	15.5	1.5	4	8.5	17.5	10.0	7.5	9.0	7.5	7.1	6.6	1.2	3.8	-	-	15.5	16.9	-	6.6	(8)	1.2
12*	21	19	23	3	17.5	21.6	22	16	40	16.0	1.5	4	8.5	17.5	10.0	7.5	10.0	6.5	7.6	5.6	1.2	3.8	-	-	15.5	17.4	-	6.6	(8)	1.2
14*	23	21	25	3	20.5	24.6	24	18	40	16.5	1.5	4	8.5	17.5	10.0	7.5	10.0	6.5	7.6	5.6	1.2	3.8	-	-	15.5	17.4	16.5	6.6	(8)	1.2
15	24	-	-	-	20.5	24.6	25	19	-	-	-	-	-	-	-	11.0	7.5	8.6	6.6	1.2	3.8	-	-	15.5	17.4	-	-	-	-	1.2
16*	26	23	27	3	22.0	28.0	26	21	40	18.0	1.5	4	8.5	17.5	10.0	7.5	11.5	8.5	9.0	7.5	1.5	5.0	-	-	17.5	19.5	16.5	6.6	(8)	1.5
18*	29	27	33	3	24.0	30.0	31	23	45	19.5	2.0	5	9.0	19.5	11.5	8.5	12.5	9.0	10.0	8.0	1.5	5.0	15	7.0	18.5	20.5	18.0	7.5	(8)	1.5
20*	31	29	35	3	29.5	35.0	34	26	45	22.0	2.0	5	9.0	19.5	11.5	8.5	12.5	8.5	9.5	7.5	1.5	5.0	15	7.0	20.0	22.0	19.0	7.5	(8)	1.5
22*	33	31	37	3	29.5	35.0	36	28	45	21.5	2.0	5	9.0	19.5	11.5	8.5	12.5	8.5	9.5	7.5	1.5	5.0	15	7.0	21.5	23.5	20.5	7.5	(8)	1.5
24*	35	33	39	3	32.0	38.0	38	30	50	23.5	2.0	5	9.0	19.5	11.5	8.5	12.5	8.5	9.5	7.5	1.5	5.0	15	7.0	23.0	25.0	22.0	7.5	(8)	1.5
25*	36	34	40	3	32.0	38.0	39	31	50	26.5	2.0	5	9.0	19.5	11.5	8.5	12.5	8.5	9.5	7.5	1.5	5.0	15	7.0	24.5	26.5	23.5	7.5	(8)	1.5
26	37	-	-	-	34.0	40.0	40	32	-	-	-	-	9.0	-	-	-	13.0	9.0	10.0	8.0	1.5	5.0	-	-	24.5	26.5	23.5	-	-	1.5
28*	40	37	43	3	36.0	42.0	42	35	50	26.5	2.0	5	9.0	19.5	11.5	8.5	14.0	10.0	11.0	9.0	1.5	5.0	15	7.0	24.5	26.5	24.5	7.5	(8)	1.5
30*	43	39	45	3	39.2	45.0	44	37	50	26.5	2.0	5	9.0	19.5	11.5	8.5	14.0	11.5	11.0	10.5	1.5	5.0	15	7.0	24.5	25.0	24.5	7.5	(8)	1.5
32*	46	42	48	3	42.2	48.0	46	39	55	28.5	2.0	5	9.0	19.5	11.5	8.5	14.0	11.5	11.0	10.5	1.5	5.0	15	7.0	28.0	28.5	28.0	7.5	(8)	1.5
33*	47	42	48	3	-	-	47	40	55	28.5	2.0	5	9.0	19.5	11.5	8.5	-	12.0	-	-	-	-	15	7.0	-	-	-	7.5	(8)	1.5
35*	49	44	50	3	46.2	52.0	49	43	55	28.5	2.0	5	9.0	19.5	11.5	8.5	14.5	12.0	11.5	11.0	1.5	5.0	15	7.0	28.0	28.5	28.0	7.5	(8)	1.5
38*	53	49	56	4	49.2	55.0	54	45	55	33.5	2.0	6	9.0	22.0	14.0	10.0	14.5	11.3	11.5	10.3	1.5	5.0	16	8.0	31.0	32.2	31.0	9.0	7.5	1.5
40*	56	51	58	4	52.2	58.0	56	49	55	36.0	2.0	6	9.0	22.0	14.0	10.0	14.5	11.8	11.5	10.8	1.5	5.0	16	8.0	34.0	34.7	34.0	9.0	(8)	1.5
42	59	-	-	-	53.3	62.0	58	52	-	-	-	-	9.0	-	-	-	17.0	13.2	14.3	12.0	2.0	6.0	-	-	35.0	37.3	35.0	-	-	2.5
43*	59	54	61	4	-	-	59	52	60	38.5	2.0	6	9.0	22.0	14.0	10.0	-	13.2	-	-	2.0	-	16	8.0	-	-	-	9.0	7.5	2.5
45*	61	56	63	4	55.3	64.0	61	55	60	39.5	2.0	6	9.0	22.0	14.0	10.0	17.0	12.8	14.3	11.6	2.0	6.0	16	8.0	36.5	39.2	36.5	9.0	(8)	2.5
48*	64	59	66	4	59.7	68.4	64	58	60	46.0	2.0	6	9.0	22.0	14.0	10.0	17.0	12.8	14.3	11.6	2.0	6.0	16	8.0	42.0	44.7	42.0	9.0	(8)	2.5
50*	66	62	70	4	60.8	69.3	66	61	60	45.0	2.5	6	9.0	23.0	15.0	10.5	17.0	12.8	14.3	11.6	2.0	6.0	17	9.5	43.0	45.7	43.0	9.5	(8)	2.5
53*	69	65	73	4	-	-	69	64	70	47.0	2.5	6	9.0	23.0	15.0	12.0	-	13.5	-	-	-	-	17	9.5	-	-	-	11.0	8.0	2.5
55*	71	67	75	4	66.5	75.4	71	66	70	49.0	2.5	6	9.0	23.0	15.0	12.0	18.0	14.5	15.3	13.3	2.0	6.0	17	9.5	47.0	49.0	47.0	11.0	(8)	2.5
58*	76	70	78	4	69.5	78.4	78	69	70	55.0	2.5	6	9.0	23.0	15.0	12.0	18.0	14.5	15.3	13.3	2.0	6.0	18	10.5	50.0	52.0	50.0	11.0	(8)	2.5
60*	78	72	80	4	71.5	80.4	79	71	70	55.0	2.5	6	9.0	23.0	15.0	12.0	18.0	14.5	15.3	13.3	2.0	6.0	18	10.5	51.0	53.0	51.0	11.0	(8)	2.5
63*	83	75	83	4	-	-	83	74	70	55.0	2.5	6	9.0	23.0	15.0	12.0	-	14.2	-	-	-	-	18	10.5	-	-	-	11.0	(8)	2.5
65*	84	77	85	4	76.5	85.4	85	77	80	55.0	2.5	6	9.0	23.0	15.0	12.0	18.0	14.2	15.3	13.0	2.0	6.0	18	10.5	52.0	54.3	52.0	11.0	(8)	2.5
68*	88	81	90	4	82.7	91.5	88	80	80	55.0	2.5	7	9.0	26.0	18.0	12.5	19.0	14.9	16.0	13.7	2.0	6.0	18,5	11.0	53.0	55.3	52.7	11.3	(8)	2.5
70*	90	83	92	4	83.0	92.0	90	83	80	57.0	2.5	7	9.0	26.0	18.0	12.5	18.0	14.2	15.3	13.0	2.0	6.0	19	11.5	54.0	56.3	54.0	11.3	(10)	2.5
75*	98	88	97	4	90.2	99.0	98	88	80	62.0	2.5	7	9.0	26.0	18.0	12.5	18.0	15.2	15.3	14.0	2.0	6.0	19	11.5	55.0	56.3	54.0	11.3	(10)	2.5
80*	100	95	105	4	95.2	104.0	103	93	90	61.8	3.0	7	9.0	26.2	18.2	13.0	19.0	16.2	16.3	15.0	2.0	6.0	19	11.5	58.0	59.3	58.0	12.0	10.0	2.5

Dimensions in millimeter

1) Fitting dimensions d₁₁ and d₁₂ only apply to type M37G with d₁ > 16 mm

2) Dimensions in brackets lie either above or below l_{1N}

3) l₃ valid for M3...N, l₂₁ valid for M3

*) According to EN 12756